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Wickes

BUILD YOUR SKILLS LEAFLET 203

BUILD YOUR SKILLS

FIXINGS CHECKLIST

- If you want to make a secure fixing to the walls or ceilings in your home, there are several ways of doing the job. Which you select depends on what you're fixing, and on whether you want to be able to release the fixing easily in the future.

- The quickest way of fixing a wall batten or a picture rail to a solid masonry wall is to use masonry nails (see below). These are hammered through what you're fixing and on into the wall.

- If you want to make a removable fixing into a solid wall, you need a fixing device such as a wallplug or expanding metal anchor (see overleaf) that will fit in a hole drilled in the wall and take a screw or a bolt.
- If you want to make a fixing into a timber-framed wall or a ceiling, you can either locate the studs or joists and drive woodscrews directly into them, or use a special cavity fixing device if the fixing position doesn't coincide with the studs or joists. There are several types available.

USING MASONRY NAILS

Selection and preparation

- Masonry nails are specially hardened steel nails capable of being driven into solid bricks or blockwork with a heavy hammer. They come in a range of sizes from 12mm up to 85mm. The smallest are known as masonry pins.
- Except for masonry pins, which are used to fix thin sheet materials in place, you should select the nail length so it will pass through whatever you're fixing and penetrate the wall to a depth of at least 25mm (including the thickness of any plaster).
- When used to attach battens or rails to walls, it's best to drill pilot holes through the wood first to stop the nails from splitting it. [PIC 1]

Driving nails safely

- Always wear safety spectacles or goggles when driving masonry nails. The nail may dislodge small pieces of masonry which could injure your eyes, and the nail itself could break and fly into your face if struck off-centre.
- Drive the nails into the wood so their points protrude slightly. Then offer the wood up to the wall, check that it's vertical or horizontal as required, and drive in the first nail with a series of sharp hammer blows. [PIC 2]
- If the nail penetrates with just one or two blows, it is probably being driven into a mortar course rather than solid brick, and the fixing will be weak. Reposition whatever you're fixing so the nails go into solid masonry.

Multiple nailing

- If you are using more than two nails to fix a wall batten or rail, drive the nails at the ends first. If you drive them in sequence, there is a risk that an intermediate nail may pull the batten off line. [PIC 3]
- If you need to remove a batten that has been secured with masonry nails, insert one end of a crowbar between the wood and the wall and attempt to prise the nail out. It will usually pull a chunk of masonry away with it.
- If you can't prise the nail out, break away the wood it was fixing and then hammer it on into the wall with a series of sharp hammer blows.

FIXING DEVICES

Fixing devices for solid walls all work on the expand-and-grip principle. You drill a hole in the wall and insert a plug, then drive a screw or bolt into the plug. This grips the screw and expands against the walls of the hole, providing a fixing that resists loads in both downward and outward directions. It's important to match the fixing to the expected load.
Fixing devices for timber-framed partition walls and ceilings work in a different way. Since plasterboard is a relatively weak material, cavity fixing devices expand against the inner face of the board once they have been pushed through it, spreading the load and making the fixing more secure. However, the fixing can only be as strong as the board, so these devices are suitable only for medium loads.

Wall plugs

The most widely used fixing device for solid walls is the moulded wallplug. This is made of plastic or nylon, and has teeth and two or three expanding wings that grip the hole when a woodscrew is driven into the plug. To make a good fixing, the drill bit and screw size must match the plug precisely. They are suitable for fixings carrying medium loads - a curtain track or modestly-laden shelves or cabinets, for example.

Frame fixers

Frame fixers are long plugs, usually supplied with a fixing screw. They are designed for use in fixing door and window frames to masonry in one operation. You drill the hole through the frame and into the wall, then insert the plug through the frame and tighten the screw. Wickes also stocks a special frame fixer for PVCu windows.
Most frame fixers have cross-head screws, but heavier duty types - used to fit a fence post to a wall, for example - have large hexagonally-headed screws that can be driven with a spanner or socket set.

Hammer fixers

Hammer fixers are frame fixers designed for high-speed installation. You simply position the fixing and hammer in the screw, which can be removed with a screwdriver if the fixing ever has to be undone.

Screwbolts

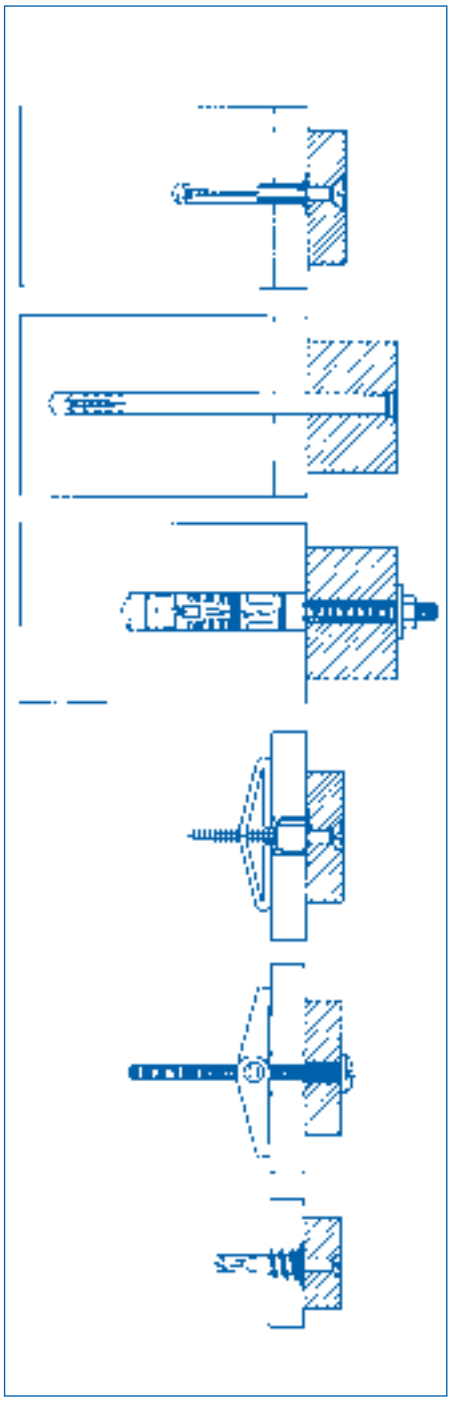
Screwbolts are specially-threaded bolts that can be driven straight into a hole drilled in the wall, using a spanner. They are best used for fixings carrying a downward rather than an outward load. There is also a screwbolt eye version that's ideal for hanging washing lines and the like.

Wall bolts

Wall bolts are heavy-duty fixings used to secure structural timbers such as wall plates to walls. They have a metal sleeve containing a conical metal wedge. As the bolt is screwed into it, the wedge is drawn towards the surface and forces the split sleeve against the walls of the hole to anchor it securely in place.
Wickes stocks a similar version with a threaded rod and an external nut, and also a resin anchor system that's ideal for making fixings into misshapen holes in concrete.

Cavity fixing devices

Wickes stocks a range of fixings for hollow walls and ceilings. The cavity fixing is a collapsible anchor which is expanded as the integral screw is tightened and grips the inner face of the board. The collar keeps the fixing in place if the screw is removed.
Spring toggles have two spring-loaded arms that flip out as the device is inserted, and then press against the inner face of the board as the screw is tightened. The toggle is lost in the cavity if the screw is undone.
Both these fixing devices can carry medium loads, especially if several devices are used.
Universal fixers are a combination wall plug and cavity fixing which can be used in both solid and hollow walls. They don't provide as strong a fixing as cavity fixings or spring toggles, but can be used to make fixings to hollow doors, which don't have a deep enough cavity to allow a cavity fixing or spring toggle to operate.
For light-duty fixings, the plasterboard self-drive fixer is ideal. It's a threaded plug which is simply screwed into a small starter hole and cuts its own thread in the board. It stays put if the screw is removed.



How fixing devices work
Wallplug and woodscrew
Frame fixer and screw
Wallbolt
Cavity fixing
Spring toggle
Self-drive fixer

PROBLEM SOLVER

[P] The wallplug simply rotates in the hole when the screw is driven into it.

[S] Fit a larger wallplug or try using a larger-diameter screw. If the fixing can be relocated, drill a fresh hole and remake the fixing elsewhere. Always use the drill bit and screw size recommended by the wallplug manufacturer.

[P] The wallplug sits proud of the surface.

[S] Pull it out - if necessary by driving a screw into it by a couple of turns, and then pulling the screw head with pliers. Drill the hole out a bit deeper and reinsert the plug so its collar is flush with the surface.

[P] A slamming door has made the door frame come loose.

[S] Drill two or three holes through the frame with a twist drill bit, then switch to a masonry drill bit to drill on into the wall. Then insert frame fixers and tighten the screws.

[P] Tightening a wallbolt has cracked the brickwork of a garden wall.

[S] Always position wallbolts at least two courses away from the top of a wall, or on brick length from a corner. The forces the sleeve exerts as the bolt is tightened can crack the brickwork otherwise.

[P] The cavity fixing used to attach a chandelier to the ceiling has been lost in the ceiling cavity when the light was taken down for cleaning.

[S] Use cavity fixings rather than spring toggles to reattach the chandelier. They remain in place if the fixing screws are withdrawn.